

Key Management Center >>



The Key Management Center (KMC) is a specialized product developed for rail transit systems, dedicated to managing communication keys between ETCS entities (ERTMS/ETCS on-board equipment and RBCs). It enables full lifecycle management of the cryptographic keys, strictly isolates keys between production and training environments, and complies with SUBSET-114 KMC-ETCS Entity Offline KM FIS to achieve offline key synchronization for trackside and on-board equipment. It is applicable to ETCS systems in high-speed railways, intercity railways and conventional railways.

>> System Functions

● Trackside & On-board Equipment Management

○ Full Lifecycle Device Management

Provides comprehensive support for the entire device management workflow, including the addition and removal of devices, as well as seamless batch import/export of data, meeting large-scale operational needs.

○ Secure Key Operations

Facilitates the installation of keys and updates, as well as one-click deletion of all keys, ensuring full control throughout the key lifecycle.

○ End-to-End Management

Manages the complete lifecycle of transport and authentication keys - from generation and distribution to expiration - ensuring compliance throughout the entire enclosed process.

Dev Desc	Dev ID	Dev Type	Create Time	Key Off Type	Status	Operation	Dev Key Off	Detail
ATPS	20005	Trackside Unit	2025-04-21 14:08:30	Both	Enable	Update	Delete	Install
ATPA	20004	Trackside Unit	2025-04-21 14:08:13	Both	Enable	Update	Delete	Install
ATPB	20003	Trackside Unit	2025-04-21 14:07:50	Both	Enable	Update	Delete	Install
ATPC	20002	On-board Unit	2025-04-21 14:08:04	Both	Enable	Update	Delete	Install
ATPD	20001	On-board Unit	2025-04-21 14:06:11	Both	Enable	Update	Delete	Install
RBC2	10002	Trackside Unit	2025-04-21 14:09:52	Both	Enable	Update	Delete	Install
RBC1	10001	Trackside Unit	2025-04-21 14:09:38	Both	Enable	Update	Delete	Install

ID	Dev 1	Dev 1 ID	Dev 2	Dev 2 ID	Key Type	Create Time	Start Validity Period	End Validity Period	Status	Operation	Detail
19	ATPS	20005	ATPA	20001	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
18	ATPS	20005	RBC1	10001	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
21	ATPS	20005	ATPB	20002	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
22	ATPS	20005	ATPA	20004	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
23	ATPS	20005	ATPB	20003	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
24	ATPS	20005	RBC2	10002	HMBC	2025-04-21 14:08:43	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
16	ATPS	20005	-	KTRWAS	2025-04-21 14:08:38	-	-	-	Generated	Modify	Delete
17	ATPA	20004	RBC1	10001	HMBC	2025-04-21 14:08:38	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
15	ATPA	20004	RBC2	10002	HMBC	2025-04-21 14:08:38	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
14	ATPA	20004	ATPB	20002	KTRWAS	2025-04-21 14:08:14	-	-	Generated	Modify	Delete
11	ATPB	20003	ATPA	20001	HMBC	2025-04-21 14:07:53	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
12	ATPB	20003	RBC1	10001	HMBC	2025-04-21 14:07:53	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
13	ATPB	20003	RBC2	10002	HMBC	2025-04-21 14:07:53	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
14	ATPB	20003	RBC2	10002	HMBC	2025-04-21 14:07:53	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
10	ATPB	20003	-	KTRWAS	2025-04-21 14:07:53	-	-	-	Generated	Modify	Delete
7	ATPB	20003	RBC1	10001	HMBC	2025-04-21 14:06:58	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
8	ATPB	20003	RBC2	10002	HMBC	2025-04-21 14:06:58	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
9	ATPB	20003	ATPA	20001	HMBC	2025-04-21 14:06:58	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
6	ATPB	20003	-	KTRWAS	2025-04-21 14:06:58	-	-	-	Generated	Modify	Delete
5	ATPA	20001	RBC2	10002	HMBC	2025-04-21 14:06:18	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
4	ATPA	20001	RBC1	10001	HMBC	2025-04-21 14:06:18	2025-04-22 14:00:00	2025-05-21 14:00:00	Generated	Modify	Delete
3	ATPA	20001	-	KTRWAS	2025-04-21 14:06:14	-	-	-	Generated	Modify	Delete
2	RBC2	10002	-	KTRWAS	2025-04-21 14:06:53	-	-	-	Generated	Modify	Delete
1	RBC1	10001	-	KTRWAS	2025-04-21 14:06:48	-	-	-	Generated	Modify	Delete

● Key Management

○ Comprehensive Key Operational Coverage

Supports key generation, renewal, and deletion, while providing real-time monitoring of key status (e.g., activation, validity, expiration, etc.) enabling dynamic key management.

○ Secure Key Import/Export Functionality

Leverages integrity verification mechanisms, such as hash checks, to prevent tampering or leakage during key transmission.

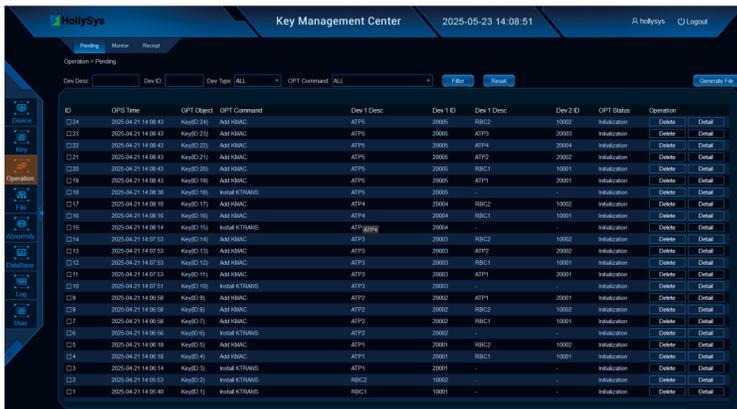
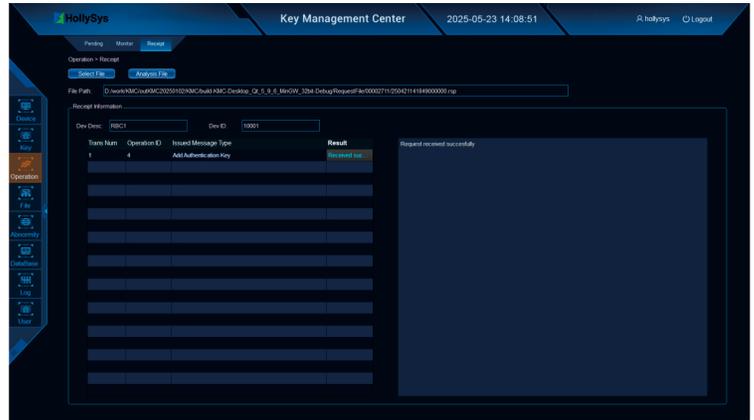


● **Isolated Key Environments**

Strictly isolates the key systems of the production and simulation environments, preventing operational key security from being affected by simulations.

● **Streamlined Process Control for Key Operations**

Utilizes built-in, standardized workflows to govern the key management process - from request and approval to execution - ensuring full traceability for every operation.



● **Comprehensive Key Status Monitoring Across Full Lifecycle**

● **Real-Time Key Operation Monitoring & Visualization**
Features an intuitive interface that displays the status of key generation, distribution, execution and feedback, enabling key management personnel to monitor the progress in real time.

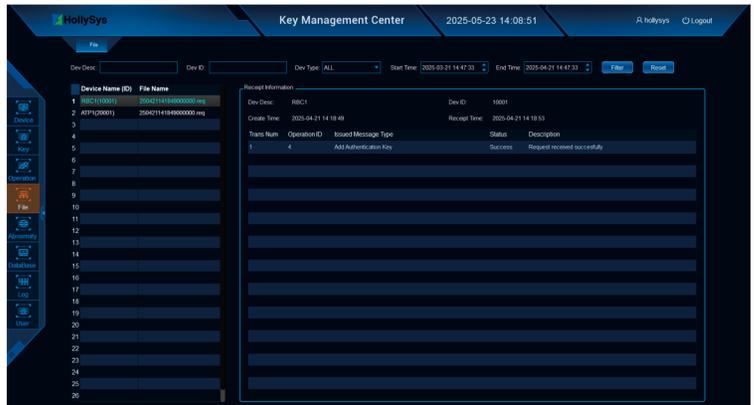
● **Database with Advanced Search Capabilities**
Supports multi-criteria advanced search and filtering (e.g., by device ID, operation time, device type) enabling key management personnel to quickly locate key installation confirmation records to improve query efficiency.

● **Automatic Abnormal Detection in Key Management**

Employs advanced algorithms to continuously monitor key status and operations, automatically identifying risky behaviors.

● **Real-time Alerting for Key & Operation Anomalies**

Generates instant alerts upon detecting issues, such as key expiration or operation timeout, drastically reducing response times of potential faults.



Features



Key Operation Compliance Auditing



Strict Key Isolation between Production and Simulation Environments



Proactive Alerting for Keys and Operations



SUBSET-114 Compliance

References

HollySys provided self-developed Key Management Center to the **Passenger Rail Agency of South Africa (PRASA)** in the KwaZulu-Natal (KZN) Service Region.

Tel: +86(10)-58981000
 Email: railinfo@hollysyst.com
 Web: www.hollysyst.com
 Version: 2026.1

